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Teacher's Primary Role for Education Reform: Equalizing Learning Outcomes

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When a teacher plans instruction, he has in mind some prototypical students or group: someone like himself or some group similar to his in ability. With this conception of the prototypical students or group, he teaches only one-third of students to reach a level of achievement. At the end of semester, most teachers give their grades, generally reflecting students' IQ scores, according to a normal distribution curve. There are good learners and poor learners, faster learners and slow learners in any classroom, mainly due to their inborn abilities or environment. We believe that all people are created equal, and deserve equal educational opportunity. Therefore, educational outcomes should be equal for all students in general basic education. Equality of learning outcomes and vertical equality in the learning process are very hard to achieve. Nevertheless, it has to be an ideal goal of schooling and a long-range objective of education reform. In accordance with the goal of schooling and education reform, the principal role of teachers should be teach all students to master their subject.

Key words: school-as-factory, teaching profession, rank order, individualized instruction, equal outcomes, mastery learning

Final Goal of Education Reform

Each country is pursuing education reform as if it were in competition with other countries. The reason is that they believe education to be the driving force of political, economic, cultural, and social development. Therefore, many countries push education reform for national development and continuously increase investment in education based on the optimistic assumption that an educated population contributes to the socio-economic development of the society as a whole and contributes to the well-being of individuals within the society (Schultz, 1980).

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From now on, policy efforts should concentrate on realizing an advanced stage of education to achieve educational welfare. Educational welfare means an organized system of educational services and institutions, designed to assist all individuals in fulfilling their educational needs and attain self-realization. There is a growing number of people and educational theorists claiming that the educational consumer needs rather than supplier needs are far more important (Kim, 2005). Therefore, education reform must start from the premise of how to expand educational opportunities and guarantee equality of education for all individuals including the educationally alienated and otherwise disadvantaged by responding to their educational needs (Yun, 1990).

The major thrust of education reform efforts should ideally be directed toward upgrading student's levels of academic achievement. School should focus on the academic achievement of students, maintain high expectations for student achievement, allocate and use academic learning time

effectively, maintain an orderly and supportive school climate, provide learning opportunities for teachers and students, and employ regular programs of evaluation and feedback to students (Hoy & Miskel, 1987). Accordingly, the classroom teacher is the most important person in the education reform process while in reality, the teacher is encouraged to leave the classroom by means of promotion, higher pay, and status (Myers, 1973).

This paper seeks to stimulate a rethink of the role of the classroom teacher. What a teacher thinks teaching is, like gardening, pottery, midwifery determines the direction, tone, and style of the teacher (Fenstermacher & Soltis, 1986). Teachers in the 21st century are expected to take on expanded roles and more responsibilities, such as curriculum developers, action researchers, team leaders, and staff development facilitators (Campbell et al., 2003). This multiplicity of roles suggests that the importance of traditional roles, which focus exclusively on classroom instruction, have been reduced. However, to realize equality of learning outcomes which is the final goal of education reform in most of countries, the priority of policy efforts should be given to the classroom teacher's traditional role.

The Difference of Products between School and Factory

The school-as-factory analogy has been frequently cited in the criticism of prevailing dysfunctional practices in formal education. Bloomberg has said that the term of education factories conjures up an image of masses of students, identified only by IBM numbers, moving through a conveyer-belt system of standardized courses during which they view lectures video-taped by professors never seen in the flesh and then read programmed learning texts in preparation for multiple-choice exams graded by electronic devices that scan standardized answer sheets on which they have registered their new knowledge with mark-sensing pencils. The school is viewed essentially as a workplace and learning is perceived in terms of productivity. How well the finished pupil sells to under-graduate colleges or to available employers is the measure of the factory-school's success (Bloomberg, 1967).

In terms of mass production, standardized operations, and a dehumanized climate, there are no differences between a school and factory. However, factories produce no defective goods while schools produce both qualified and unqualified students. A factory controls the quality completely with the total quality management system, but a school does not operate even a minimal-error-educational system. The level of learning, individual differences in learning, and variations in student satisfaction with learning and with themselves as learners are useful indicators of the extent to which the process of schooling approaches a minimal-error system (Bloom, 1976). Rothstein (1993) summarized conventional claims for the failure of public schools in terms of students graduating without skills required for a technologically advanced economy, doubled school funding without visible improvements, stagnant or declining academic achievement levels, and teachers smothered by bureaucracy.

The Lack of Similarity of Treatment between the Teaching Profession and the Medical Profession

Traditionally, teachers are classified as professionals just like medical doctors, lawyers, accountants, and so on. The word professional has several connotations. Perhaps the most common description of a professional teacher is one who is dedicated to the field of teaching and who is kind to students. This description holds also that the professional teacher is competent and works earnestly toward becoming more competent (Myers, 1973). It also means professional control of their clients as well as being responsive to client's self-perceived needs (Hoy & Miskel, 1987). Sometimes it is very useful to compare the education profession with the medical profession. However, analogies to the medical profession are inappropriate. There are many contrasts between the education profession and medical profession. In the education profession, the relationship is adult to child, treatment is conducted in a classroom, results are intangible and long range, compensation derives from public funds, and so on. In the medical profession, the relationship is adult to adult, treatment is conducted in a private office, results are tangible and immediately visible, the client is expected to pay the expert directly (Washington, 1969).

Above all, physicians diagnose an illness and prescribe a drug for a patient within a one-to-one relation. Medical doctors never give up on their patients except when diseases are beyond medical treatment. Their goal is always aimed at assisting a complete recovery. On the other hand, the one-to-one relationship between learner and teacher is rarely available in mass school systems. Schooling is largely a group process—twenty to thirty five students form a class in which the development of an individual may be neglected because of the preoccupation with the entire group of students (Bloom,

1976). We teach all the children of the public, regardless of circumstances of birth, status of parents, and innate ability.

The teacher is free to diagnose any problem a student is having in school, within the limits of the teacher's diagnostic ability. In concert with the development of computer technology, various kinds of educational prescriptions are available now. The use of multimedia, local area networks, shared communication systems, the Internet, shared electronic databases, video conferencing facilities, electronic self-study materials, study support and guidance through networks, progress assessment systems, intake and monitoring systems, and so on, will lead to the development of new teaching and learning strategies (Dochy, 2001). However, the teacher stops making diagnoses that lead to prescriptions. The teacher applies only a few prescriptions from which to choose once a diagnosis is made. The educational pharmacy still consists of traditional textbooks, workbooks, globes and maps, and so on (Myers, 1973). In special cases, the teacher can transfer a student to another grade because he believes such a transfer is desirable for the student. In spite of every parents' expectation that their children master the learning tasks in every subject taught by the school, only a small percentage of students learn well. The teacher has only a limited time to give individual attention to the problems of each learner.

Rank Order and Normal Distribution Curve

The essential ingredients of teaching are the sacred textbooks, the daily catechism, the formative and summative evaluations, and the year-end confirmation to certify the move up to a higher grade. When a teacher plans instruction, he has in mind some prototypical students or groups: someone like himself or some group similar in ability to his own. With this conception of the prototypical students or group, he teaches only one-third of his students to reach a level of achievement. At the end of the semester, most teachers give their grades, generally reflecting students' IQ scores, according to a normal distribution curve. If the final results of teaching were distributed proportionally on a curve, they believe that their work was successful and are satisfied with their work. One thing most teachers do not change is their policy of grading according to a curve. They believe that the proportional approach to grading avoids the possibility of favoritism and accurately reflects the performance of each student as it compares to that of others in the class (Fenstermacher & Soltis, 1986).

It is well known fact that the general intelligence tests correlate about +.50 with achievement over a great variety of courses and subjects. If the students who have a higher ability get a higher score and the students who have a lower ability get a lower score, then what did the teacher do during the semester, and where is the teacher's accountability to the students and parents? How can he explain and justify to others the decisions and actions he has undertaken? Moreover, how can he conform to external prescription? The new accountability movement in public education has called for a refocusing of attention on outcomes of school activities, rather than the traditional focusing on input alone (Burke & Minassians, 2002; NCAHE, 2005).

Where does general intelligence come from? One's intelligence is inherited from one's parent without any effort or choice. It is by a stroke of good luck that a person has high intelligence. Casual acquaintance led to have a high intelligence or a low intelligence. The poor are poor because they are intellectually incompetent; their incompetence is particularly intractable because it is inherited from their poor, and also intellectually deficient parents (Bowles & Gintis, 1977). Since inequalities of birth and natural endowment are undeserved, these inequalities are to be somehow compensated for. The natural distribution is neither just nor unjust. These are simply natural facts. What is just and unjust is the way that institutions deal with these facts (Rawls, 1971).

Our educational environment involves psychological problems, namely a competitive educational climate. It is produced by an examination-oriented education and irrelevant evaluation practice. A competitive educational climate is reinforced by privatization, decentralization and marketization which are gaining popularity in education and society. The marketization of education is dominant at both the federal and state levels, with free-market educators calling for the privatization of schooling through a variety of means-vouchers, for-profit charter schools, the commercialization of school spaces and forced dependence on advertising (Weiler & Maher, 2002).

Educational organizations generally have multiple objectives and multiple outputs, many of these can not be clearly defined and measured or quantified. Educational evaluation has been concerned with limited measurable aspects of student achievement. Achievement tests measure only a small part of students' learning. We are missing many important aspects of learning, as well as other valued outcomes of schooling. However, the exams do measure outcomes that policy makers have agreed are important for students (Boyd et al., 2006). The result of this practice, so

called “education for evaluation,” or “evaluation for producing a relative rank order” has pervaded the education field. Rank order-oriented evaluation fails to provide relevant diagnostic information that is needed to adapt instruction appropriately to the needs of the learner.

Individualized Instruction for Equal Outcomes

We believe that all people are created equal, and deserve equal educational opportunities. In a free, democratic society which respects the dignity of human beings, every individual should be ensured of an equal opportunity to live a meaningful life. Slow learners as well as physically-handicapped learners are relatively disadvantaged in attaining equality in education, and this may adversely affect their efforts to accomplish as much as others (PCER, 1987). Education has been considered not only a powerful tool for self-development and social integration, it has been seen as the great equalizer. Education, then beyond all other devices of human origin, is the great equalizer of the conditions of men-the balance wheel of social machinery. It does better than to disarm the poor of their hostility toward the rich, it prevents poverty (Bowles & Gintis, 1977).

The notion of equality was enlarged from its original meaning which was conceived as equality of opportunity, that is, free and universal education for all groups. The modern view of equality now includes (a) equality based on spending additional monies for special programs and groups, illustrated by compensatory funding, (b) equality based on racial composition, as suggested by school desegregation and integration, (c) equality based on outcomes for students with similar backgrounds, spearheaded by the accountability movement and school finance reform, and (d) equality based on equal outcomes for students with unequal backgrounds and abilities, expressed by affirmative action and quotas (Lunenburg & Ornstein, 1991).

Once we start to define inequality in terms of equal outcomes, we start focusing our interests in individualized instruction theory. There are critical views blaming education for the uniformity of educational programs that have stymied the fullest development of individual potential for self-realization. Uniformity and rigidity have been the hallmarks of most educational management up to now. These were the major factors which stifled the individual characteristics of learners. Some teachers argue that they are unable to deal with the multiple characteristics of their students. To pursue the inherent goals of education, that is, to stretch one's potential to the fullest measure, diversity and flexibility should be reflected in managing the schools so that these attributes complement instruction catering to individual needs (PCER, 1987).

There are good learners and poor learners, faster learners and slow learners in a classroom, mainly due to the inborn abilities or nurturing environment. Each learner has his own pace of learning which is manifested in the level of achievement. Inasmuch as instruction is attentive to individual differences in learning, it is desirable that advancement to higher grade levels be contingent upon the pace of learning. Fast learners or high achievers should be given programs which enrich their learning experiences and challenge their potential for growth. On the other hand, slow learners should be given programs which suit their pace of learning or should be allowed to spend more time on learning task. Slow learners should be provided with supplementary programs designated to remedy learning deficiencies (PCER, 1987). Teachers should be motivated to search for new teaching methods that enhance student achievement and provide motivation for learning. Educational outcomes should be equal for all students in general basic education.

Mastery Learning for Zero Defective Products

There are two contrasting achievement goals in education-learning or mastery goals and performance goals. Within a mastery goal, students' behavior is oriented toward trying and learning. Within a performance goal, students' behavior is oriented towards comparison and competition (Lemos, 1996). Allowing students the opportunity to achieve mastery of content at different time intervals has proven to be an effective method of increasing student learning. In the Carroll model of school learning, the basic thesis is that time is a central variable in school learning and that students differ in the amount of time they need to learn a given unit of learning to some set criterion (Carroll, 1963). He specified that the quality of instruction and the student's ability to understand the instruction would, when both were optimal, make the time needed minimal for each student. In Carroll's theory, learning is a function of time spent divided by the time needed. The mastery technique of teaching gives the students a complete learning experience.

Mastery learning is based on the assumption that given enough time and the proper instruction, most students can master any learning objective. “Mastery” usually means a score of 80 to 90 percent on some kind of assessment.

Students who do not reach the minimum level of mastery or who reach this minimum but want to improve their performance can repeat the unit (Hoy & Miskel, 2001). Students, parents, teachers, and schools participate in meeting what is expected of them. Setting the minimum level of mastery for all ensures equity. This level is standard criteria that specifies what every student should attain with no relation to his/her origin, gender, socio-economic status, etc. (Zuzovsky & Libman, 2005). If teachers and curriculum designers can define an appropriate criterion of achievement, then it becomes the responsibility of the teachers and the schools to provide the time necessary for the students to attain that criterion. If time is the central variable and the necessary time is provided, then the attainment of the criterion is possible for all students who can be motivated to use the time they need (Bloom, 1973). The key to the success of mastery learning strategies largely lies in the extent to which students can be motivated and helped to correct their learning difficulties at the appropriate points in the learning process (Bloom, 1976).

However, there will be some learners who learn at a slow rate than the average student. Slower students require a slower pace, smaller steps, more review, more explanation of new material, more guided practice, and more independent practice. If a student fails one task, presumably he can not learn the next task, unless he remedies his failure before proceeding on to the next task. Here also, the student's perception of his ability to learn each task affects his motivation for the next task in the series (Bloom, 1976). Students will make greater achievement gains if they spend most of their time either being directly instructed by the teacher or working independently under close teacher supervision. Achievement is slightly negatively related to class size. Fewer students in a class means higher achievement (Davis & Thomas, 1989; Greenwald et al, 1996; Finn et al, 2001).

Bloom has argued that if students are normally distributed with respect to aptitude, but the kind and quality of instruction and learning time allowed are made appropriate to the characteristics and needs of each learner, the majority of students will achieve mastery of the subjects (Bloom, 1976, p. 4). The mastery learning proponent believes that intelligence and aptitude are not the best indicators of potential achievement. Bloom (1976, 1980) has pointed out that cognitive entry characteristics such as specific knowledge, abilities, and skills, which are necessary prerequisites to a particular learning task, are better predictors of later achievement.

The No Child Left Behind Law forms the main part of the Bush Administration's education policy. The United States Education Secretary Spellings argues that schools must show progress in tests by special groups including low-income and minority students. The idea of reporting their test scores is to keep schools from hiding the scores of poorly performing students. That can happen when schools average the low test scores of such students with those of students with higher scores.

Conclusion

Equality of learning outcomes and vertical equality in the learning process are very hard to achieve. Since Coleman et al (1966) concluded that family background is the principal determinant of pupil achievement, and Jencks et al (1972) announced that pupil achievement is determined primarily by individuals and their characteristics, it follows logically that when it comes to pupil achievement, teaching does not matter very much. Nevertheless, equality of learning outcomes has to be a goal of education reform rather than equality of opportunity. Inequality of treatment may be needed if children are to attain equality of learning outcomes. In accordance with the goal of schooling and education reform, the principal role of teachers should be teaching students all to master the subject. To perform their role successfully, they should treat every student as an individual, which means responding differently to different students.

Computer programs can provide opportunities to study at the times and pace suited to the individual's needs. Mastery learning and computer assisted instruction provide a perfect match as schools become more reliant on technology. The advantages of using a computer for keeping records, saving classroom time, and providing students with opportunities for repetition and practice for mastery makes the computer an invaluable tool for learning (Motamedi & Sumrall, 2000).

Classroom teachers should keep in mind that "equal treatment for unequal is unequal," and a student can be an active participant in the teaching-learning process if he understands the value of learning. The results of the teacher's work or school's effort should be measured by the academic growth of pupils. We should no longer tolerate school systems that failed to focus on under qualified graduates. Now, all educators and educational administrators should attentively listen to instructional theorists' research findings and should concentrate their efforts to produce no defective graduates.

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